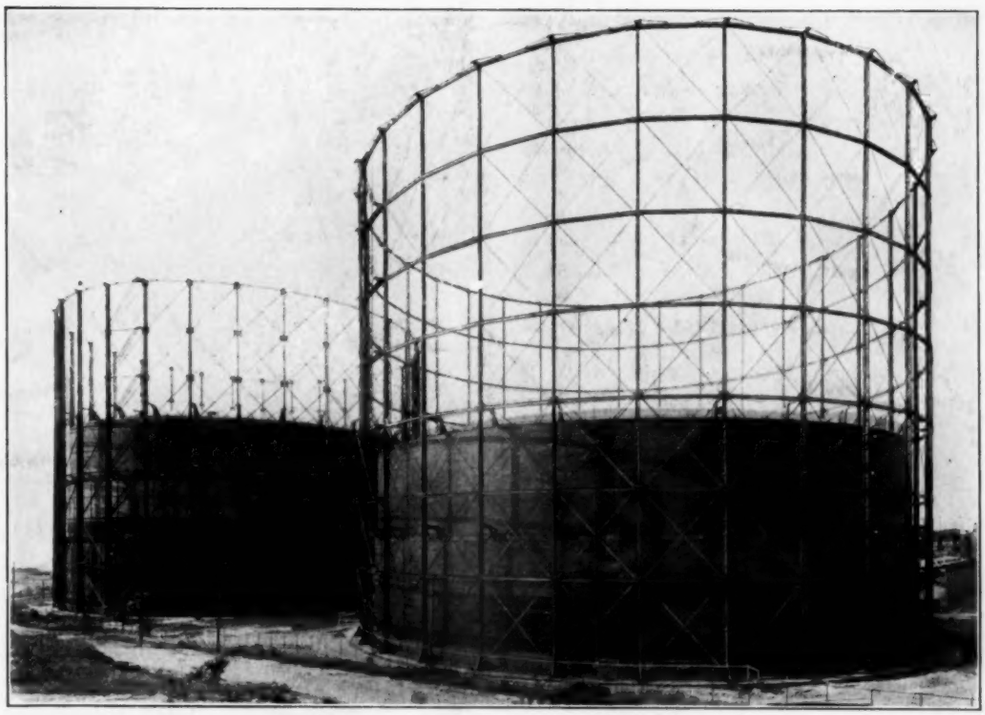
American
GAS JOURNAL
Formerly American Gas Light Journal
EST. 1859

VOL. 118 No. 4
WHOLE NO. 2881

NEW YORK, SATURDAY, JULY 28, 1923

Subscription $3 per year
In Canada $5 Foreign



Two 15,000,000 Cubic Feet Gas Holders

FIVE LIFT, IN CONCRETE TANKS
THE LARGEST IN THE WORLD
DESIGNED AND BUILT BY
THE BARTLETT-HAYWARD COMPANY

The Bartlett-Hayward Company

Engineers and Builders

BALTIMORE NEW YORK

Library of Congress
JUL 30 1923
Smithsonian Deposit

Index to Contents, Page 3 Advertising Index, Page 33

Koppers Coal Gas Plant

Faced with the certainty of an inadequate supply of anthracite coal and consequently poorer quality, domestic consumers everywhere are turning to COKE as the ideal fuel for house-heating.

Many gas companies, realizing this, will turn it to their advantage by installing coal gas plants.

KOPPERS SMALL OVEN COAL GAS PLANT is designed to meet just this condition.

Producing a maximum of gas per ton of coal carbonized and a very much better grade of coke, it exactly meets the requirements of the gas industry.

These features, combined with the comparatively small initial cost, cheaper operating and maintenance charges and longer life, make this plant an attractive investment for any gas company having a send-out over half a million feet of gas per day.

Is there a market for coke in your vicinity? Have you thought of developing one? It will mean cheaper gas if you do.

The KOPPERS COMPANY

PITTSBURGH, PA.

CHICAGO, ILL.

FRACTIONAL CONDENSATION

AUTHORITIES agree quite generally that the highest condenser efficiency is obtained when the gas is cooled in several stages or passes and the condensate from each stage removed at or near the temperature at which it was condensed.

THIS condition and others of equal importance are fully met by a narrow rectangular condenser with steel tubes, or by the so-called "Salt-water" type.

THE ISBELL-PORTER COMPANY through its Engineering Department will be glad to suggest the best type of condenser to suit your particular conditions. Write for Bulletin J.

ISBELL-PORTER COMPANY

Gas Engineers and Builders of Gas Works

NEWARK NEW JERSEY

Company Member American Gas Association

American Gas Journal

SIXTY-THIRD YEAR

Published Weekly by American Gas Light Journal, Inc., 53 Park Place, New York, N. Y.

ELBERT P. CALLENDER, Pres. S. G. KRAKE, Vice-Pres.-Treas. A. M. GLEASON, Sec'y.

STANTON G. KRAKE, Managing Editor

CHAS. S. MYERS, Field Representative

Contents of This Issue

Low Temperature Carbonization—By V. Z. Caracristi 65
The Warm Air Heating System Compared with Hot Water Boilers—By J. B. Allington 70
The Service Charge—By J. E. Bullard 71
Success Secrets—By L. G. Herbert 72
Gas Company and Plumbing Dealer Co-operation—By Frank H. Knapp 73
As the Journal Views It 75
An Unnecessary Expense
The Walker Bill Again
News of the Gas Industry 79

Subscription $3.00 per year, including postage, in the United States, Mexico, Cuba, Porto Rico, Hawaii or the Philippines; in Canada, $4.00; foreign, $5.00—Single Copies, 10 cents.

AMERICAN GAS JOURNAL, July 28, 1923. Vol. 119, No. 4.
Published weekly by American Gas Light Journal, Inc., New York, N. Y.
Entered as second-class matter Jan. 9, 1917, at the post-office at New York. N. Y., under the Act of March 3, 1879.

AMERICAN
GAS JOURNAL

Vol. 119. No. 4 NEW YORK, JULY 28, 1923 Whole No. 3416

Low Temperature Carbonization

A NEW PROCESS OF CARBONIZING COAL AT LOW TEMPERATURES WITH INCREASED FIELD.

V. Z. Caracristi, Consulting Engineer.

The low temperature process, which is described in the following article, is an important development in coal carbonization. The process has actually been installed and has been operating in the plant of the Ford Motor Co. The process allows the recovery of by-products in increased amounts.

Realizing the importance of supplementing the work completed several years ago on the development of pulverized-fuel burning means, methods and apparatus for central power stations and locomotives, and in an effort further to improve over-all furnace and boiler efficiencies, the writer associated himself with Emil Piron, a chemical physicist whose life work has been the development of high-temperature coke ovens and the commercial recovery of the by-products resulting from that method of coal distillation, and attempted the design of a low temperature system which would be free from the pitfalls which had resulted in the failure of earlier systems.

We are now able to announce the complete success of this research and development, which is a "flank attack" on some of the elements contributing to the high cost of power and gas and to the cost of smokeless fuel for domestic purposes, at the same time providing a source of supply of light oil to meet motor-fuel requirements.

The greater amount of fuel available for power plant and gas-making purposes is high volatile coal. The efficiencies obtained in the conversion of this fuel into steam and gas have reached a point where the field for improvement is practically negligible. This has been clearly realized not only by individuals but by public bodies and governments, and a vast amount of energy and money has been expended in an effort to extract from this fuel, before its destructive combustion, a number of valuable products. These efforts and their results are well known and require no amplification here. The subject of this paper is confined to those efforts which have just been completed and put on a practical commercial basis, but some of the difficulties arising in earlier failures may be of interest.

Difficulties in Low Temperature Processes

High-volatile coal contains, in gaseous form, tars and other substances which are difficult to handle when in a state of transition, and much of the difficulty met in previous attempts to handle this coal has been due to the impossibility of preventing the coal and tars from sticking to the mechanism and interrupting operation during distillation.

Another cause of difficulty has been that the gases arising from the low-temperature distillation of the coal are in extremely unstable form, and when these unstable gases come into a zone of greater heat, they break down and regroup themselves into a more stable hydrocarbon form, during which process part of the carbon molecules are liberated, attaching themselves to the various portions of the structure, building up in a manner which obstructs continuous operation.

The problem therefore reduced itself to the creation of a structure in which the coal during the distillation process was stationary in relation to its supporting medium, and a structure in which the maximum temperature is less than that necessary to regroup the chemical elements in the gaseous atmosphere. The maximum temperature permissible is in the neighborhood of 1,300 deg. F.

Heat cannot be transferred with any degree of efficiency through any atmosphere without a large temperature head, and if the walls of the furnace are heated by external means to a degree sufficient to heat the coal in the chamber, even if in a thin layer, to a temperature necessary for the complete distillation of the complex hydrocarbon gases, the internal walls of such structure must necessarily be much higher than the 1,300 deg. maximum. The utilization of metal-to-metal contact through molten lead for the purpose of transmitting heat offered the best possible solution of the heat transfer problem.

Use of Molten Metal Bath

The advantage of the application of fuel directly on a molten bath was recognized to be ideal for the

purpose of heat transfer, as early as 1857, but unfortunately, after the volatile has been driven off, the coal structure becomes highly porous, and the losses of the molten material filling the pores would be so great as to make such operation prohibitive.

Modern economic conditions require continuous operation with maximum tonnage output per unit of investment cost, and belt conveyors offer the most economical method of handling material continuously.

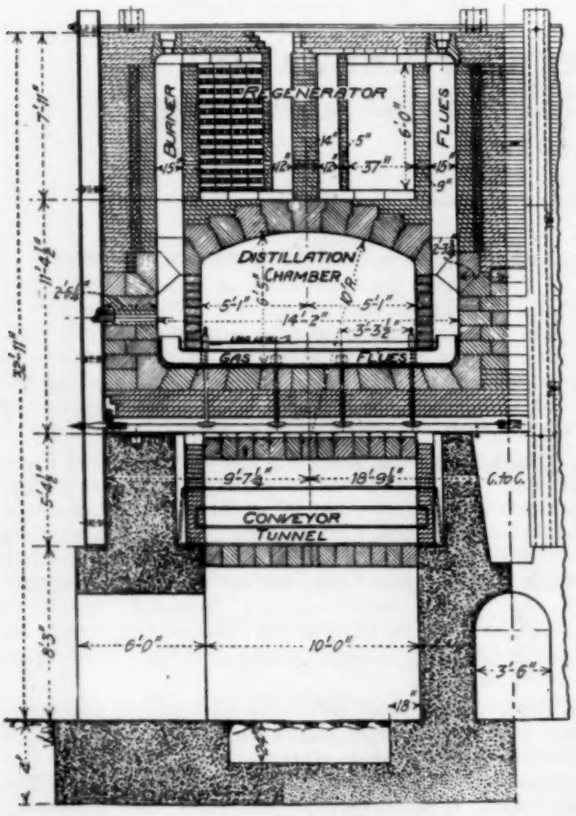


Fig. 1.—Section Through Furnace Showing Arrangement of Regenerators and Distillation Chamber.

The operation of low-temperature ovens, recovery of by-products and the conversion of the heat into steam presuppose on the part of the power-plant executive a wide range of operating experiences which have not been heretofore required, but in a properly designed and co-ordinated plant highly specialized technical knowledge is neither necessary nor desirable in ordinary daily operation.

Many years of by-product high-temperature coke-oven operation makes available fully developed commercial equipment and processes, under competitive conditions. A re-design of such apparatus to meet the peculiar necessities of the more unstable character of the true low-temperature product, without complicating operating features, fully covers the requirements and does not change the ideal condition of continuous and simple operation.

The superior qualities of the main product of low-temperature ovens—that is, coke—as well as other by-products, have long been the subject of serious consideration by chemists.

Thickness of Coal Charge Important

Theoretically, it is evident that any coke oven or gas retort would serve the purpose, the simple expedient of reducing the temperature of the heating walls to 1,400 deg. F. being all that is required to convert either of these operations into a low-temperature distillation system. This is impracticable, however, because the thickness of the usual coal charge results in slow heat transmission and low efficiency. Such an oven would not meet commercial requirements as to volume, in order to justify the fixed charges on the investment required.

Attempts at low-temperature carbonization under these conditions were made at Barugh, England, where the compartments in the vertical heating walls of a horizontal coke oven were constructed so that the coal charge was reduced to a thickness of 3 to 3½ in., leaving space for the free escape of the gases. In this oven, however, the coal thickness still required a time element of from seven to eight hours for distillation, the efficiency was low, and the capacity limited to about 3,000 lb. per day per oven.

Methods of Increasing Heat Transmission

It was therefore evident that some means had to be found to distill the coal at the required low temperature, at the same time permitting an output that would meet industrial conditions. This could be realized only by increasing the heat transmission from the supporting wall to the coal. To accomplish this, two methods are available: (a) To remove continuously the thin layer of coke forming along the heating walls by the distilling coal, as for example, by means of an agitator; (b) to cover the heating surface with a thin layer of coal and remove it after the coking is finished.

The former method was attempted by the International Coal Products Corporation and others. They succeeded in increasing the efficiency of their retorts. The International Coal Products Corporation succeeded in building a retort with a capacity of 20 tons of coal per 24-hour day. Their chief difficulty was in providing a satisfactory agitating device, for the reason that at the desired temperature (1,000 to 1,400 deg. F.) soft bituminous coal forms a swollen, sticky mass along the walls of the retort oven, which is almost impossible to remove except at the expenditure of great power. The problem was further complicated by the fact that at such temperature the metal of the agitating device loses much of its tensile strength.

In order to convince ourselves of the physical behavior of soft coal, especially West Virginia coal containing about 35 per cent volatile, we have made tests that indicate that the handling of such coals at temperatures between 1,000 and 1,400 deg. before complete distillation down to 15 per cent volatile

must be avoided. We were therefore compelled to devise a more practical method of accomplishing the desired results by the second method open to us.

Use of Thin Layers of Coal

Further tests showed that the rate of heat transfer increased rapidly when very thin layers of coal were used, the distillation time being reduced to a commercial basis when the thickness of the coal layer is one-half inch; also that there was no difficulty in removing the distilled product from the heated surface after the distillation had reached this point. In fact, at the end of the distillation the coke shrinks and falls freely from its supporting surface.

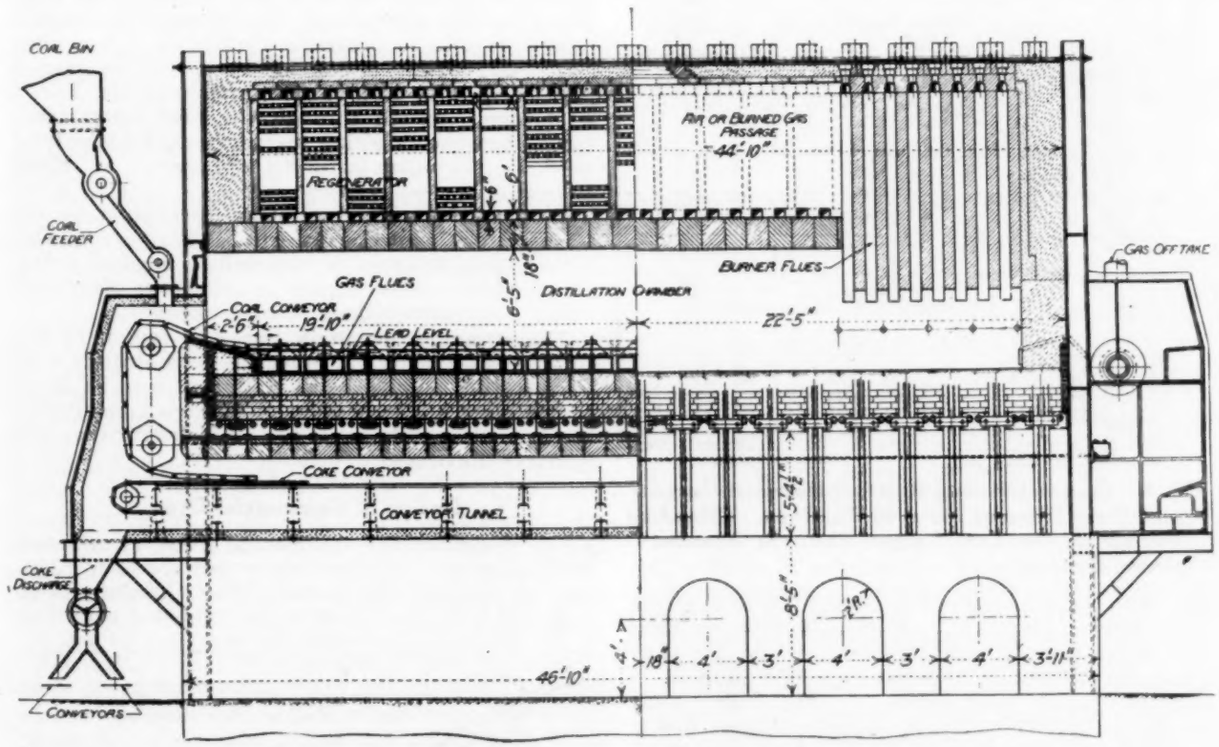


Fig. 2.—Section of Furnace Showing Feeding and Conveying System.

The products of coal distillation can be divided into two classes—primary and secondary distillation products. When coal is submitted to increasing temperatures, its more or less complicated molecules decompose progressively, and the products of decomposition distill as soon as they have reached their boiling point, giving a vapor which is a so-called primary product. If these vapors, however, before condensation, are submitted to temperatures above their distillation temperature, most of them decompose into a second class of products called secondary products. Owing to the great diversity and complex structure of these products there is no temperature limit at which the secondary products start to form. Some of the primary products decompose at relatively low temperatures, but it is generally acknowledged that the decomposition of primary products on a large scale becomes apparent only at a temperature of 750 deg. C. (1,382 deg. F.). In coke ovens and gas retorts, temperatures in the first period of distillation, where the charge is still relatively cold, correspond to so-called low-temperature distillation, while the temperatures reach to over 750 deg. C. during the second period of distillation. Therefore such distillation apparatus gives a mixture of primary and secondary products in the gas and tar.

Character of Coke Produced

Coke obtained at low temperatures—below 750 deg. C.—contains 10 to 15 per cent volatile matter, and when such coke is further heated it distills almost pure hydrogen. Because of the absence of heavy hydrocarbons, such coke burns readily, with practically no smoke and almost no lighting flame.

Coke of low-temperature distillation retains more nitrogen than high-temperature coke. For this reason low-temperature distillation gives a smaller yield of ammonia, or sulphate of ammonia, per net ton of coal, as compared with the product of high-temperature distillation. The hydrogen remaining in the low-temperature coke is accounted for by the large reduction in gas volume. Another reason for

such reduction in volume is that the molecules in the gas of low-temperature distillation are generally heavier than those of the gas of high-temperature origin, for the reason that they are not decomposed at the higher temperatures. The net result is that

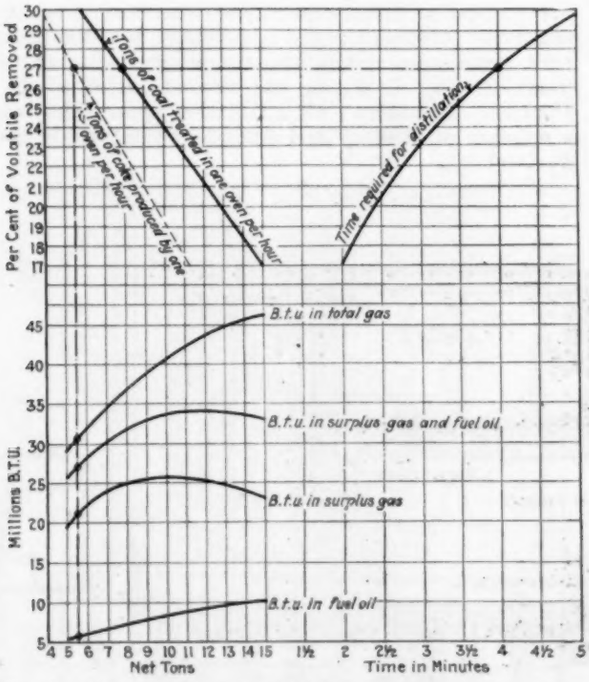

Per Cent of Volatile Removed
Millions B.T.U.
Tons of coal treated in one oven per hour
Tons of coke produced by one oven per hour
Time required for distillation
B.t.u. in total gas
B.t.u. in surplus gas and fuel oil
B.t.u. in surplus gas
B.t.u. in fuel oil
Net Tons
Time in Minutes

Fig. 3. Curves Showing Relation Between Capacity and Time Element for a 40-Ft. Oven. (Standard Oven is 25 Per Cent Larger Than the Aforementioned Oven.)

low-temperature distillation gives 6,000 to 7,000 cu. ft. of gas per net ton of coal, while high-temperature distillation gives nearly 12,000 cu. ft. At the same time the quality of the gas per cubic foot is of greater B.t.u. value than the high-temperature product. It contains less hydrogen and more hydrocarbons, and runs from 700 to 750 B.t.u. per cu. ft. as compared with 500 to 600 B.t.u. in high-temperature operation.

Higher Tar Yields

Low-temperature distillation, preserving the distilled products from cracking, gives a much higher yield of tar than high-temperature distillation; that is, from 10 to 20 gal. more per ton of coal treated. The percentage of very heavy bodies, that is, of pitch, which is primarily the result of cracking, is much smaller in low than in high-temperature distillation.

The light oil derived from the tar corresponds to not less than 5 gal. per net ton of low-temperature coke. A further quantity of light oil can be extracted from the gas obtained by low-temperature distillation. This, added to the light oil from the tar, gives 10 gal. of light oil suitable for motor fuel, per ton of coal.

An oven that operates along entirely new lines has been built at Huntington, W. Va., for the low-temperature distillation of coal or any suitable material. This is a demonstration unit only, with a daily capacity of 25 tons. The first commercial realization of the research and development work carried on by the writer and his associate for the last two years in laboratory and with the test unit at Huntington, has been made possible through the initiative of Henry Ford and his organization.

Installation at Ford Plant

The Ford Motor Co. is undertaking to build the first unit of a plant at River Rouge, Detroit, to handle ultimately 4,000 tons of raw coal a day; 1,800 tons of coke will be burned in pulverized form under boilers that are at the moment the largest operating units in existence working at high ratings with pulverized fuel, and 1,200 tons will be ground and mixed with high-volatile coal from Mr. Ford's own mines, passed through the high-temperature ovens, and the resulting metallurgical coke will be used in the manufacturing operations at River Rouge.

Work is well under way on an installation for the Ford Motor Co. of Canada, Ltd., at Walkerville, Ontario, where 400 tons of coal will be handled a day, all of which will be burned in the power plant now under construction there.

The structure shown in Fig. 2 is typical of the furnaces now being put in by the Ford Motor Co. of Canada, Ltd., and by the Ford Motor Co. at its River Rouge plant, the only point of difference being that the River Rouge furnaces are 10 ft. longer than the furnaces illustrated.

Design of Commercial Oven

The design of the commercial oven, as adopted, will consist of a clay refractory furnace 44 to 52 ft. long, having two longitudinal arched chambers 14 ft. wide and 6 ft. 5 in. total height, provided with cur-

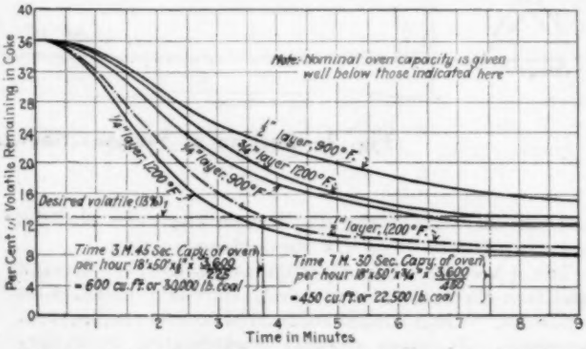

Per Cent of Volatile Remaining in Coke
Note: Nominal oven capacity is given well below those indicated here
Desired volatile (8%)
Time 3 H. 45 Sec. Capy. of oven per hour 18'x50'x½" x 3,600 / 225 = 600 cu. Ft. or 30,000 lb. coal
Time 7 H. 30 Sec. Capy. of oven per hour 18'x50'x¾" x 3,600 / 450 = 450 cu. ft. or 22,500 lb. coal
Time in Minutes

Fig. 4. Time and Capacity Tests Showing Basis for Selection of Working Temperature and Coal Layer Thickness.

tain walls at each side to separate the heating and exhaust chambers from the distillation space. Cast-iron U-shaped flues in twin form, connect the heating and exhaust chambers, the lower section of the flues being completely submerged in a bath of molten lead with refractory protection for the protruding upturned ends. These U-flues are closely placed,

providing heating-gas passages spaced 14 in. apart under the entire lead surface. Any molten lead that might follow the anchor bolts holding the U-flues submerged, is chilled by the water-cooling pipes which cover the bottom and ends of the furnace. These pipes also provide a point of escape for the heat that travels up from the bottom, or return conveyor chamber. Regenerators or recuperators rest on top of the oven proper and become a permanent part of the structure.

The heat transfer and conveyor-floating medium is lead, which is ideal for the purpose on account of high specific gravity, low melting and high boiling points, freedom from affinity for extraneous elements except free oxygen, which does not exist in the gaseous atmosphere under which it works, and the fact that it is unaffected by sulphur except under temperatures several hundred degrees in excess of the maximum used.

To minimize first costs and prevent difficulties with expansion and contraction effects, the tank containing the molten lead is built of refractory brick which will not absorb lead even when made under ordinary manufacturing conditions. It is preferable, however, that the brick be made of finely ground clay, well compacted, dried and hard-burned.

Combustion of Heating Gas

The combustion of the heating gas is made above the surface of the molten lead, on both sides of the tank, in refractory flues where a high temperature is maintained in order to insure complete combustion. The U-shaped heating flues carry the hot combustion products through the lead bath. These flues necessitate downward combustion, as extensively employed in burning powdered coal, and in the Piron system of high-temperature coke oven. This method has proved its value. The same laws governing the equalization of heat over the furnace width apply. The cooler flues draw more gas than the hot, by reason of less obstruction to draft effect.

Each chamber is provided with a conveyor system made up of three strands of cast-iron plates, each 3 ft. wide, 18-in. pitch, held by steel hinge pins $1\frac{15}{16}$ in. in diameter. The plates are 1 in. thick, with flanged ends, the hinges and pins being placed low enough to make a flat, unobstructed surface to receive the incoming coal. The hinge joints are so overlapped that no cracks are formed through which incoming ground coal might reach the supporting lead. These three conveyor chains operate on a common sprocket shaft of special cast iron, integral design, and are separated into strands for the purpose of simplifying manufacture. Three sprockets only are provided for the run; no appreciable energy is necessary to move the conveyor through the supporting bath, and the customary fourth sprocket is omitted, the unsupported chain acting as its own take-up.

Conveying System

The conveyors are supported, on their return under the furnace proper, by a series of rollers resting on rails. These rollers in turn carry a secondary conveyor system. After its passage through the heating chamber, the coal, now at a temperature of approximately 1,200 deg. F., falls on the supplementary conveyor and again passes the full length of the furnace, at half its former speed. The conveyor which has been transmitting the heat to the coal is reversed on this run, and the heat in the coal is being utilized to some extent to prevent any drop in temperature of the conveyor plates. Of greater importance, however, is the fact that this extra time in the hot gaseous atmosphere of the furnace structure frees the treated coal of the last vestige of unstable gas, but does not restrict either the time or capacity of the direct lead-heated upper portion of the structure. Accessible cast iron, gastight, and heavily heat-insulated housings carry the mechanism at both ends, and ample explosion door area is provided. All bearings are outside the heated zone and are operated without external lubrication. The power required to drive the mechanism is less than 5 hp. for each side, including the feeding device, and is therefore not more than ¾ kw.-hr. per ton output.

Waste gases leave the U-flues at temperatures slightly above the 1,200-deg. F. temperature maintained in the bath. This heat is not lost, being used to heat the incoming air, either by recuperators of special design or by ordinary regenerators, as shown in Fig. 1.

Unsolved Problems in Process

There are still a number of commercially unsolved problems in this development. The laboratory and practical research work done, however, indicates that no serious difficulty will arise in the commercial recovery of the byproducts, which, in simple commercial form, will consist of the following, per ton of coal handled: (1) 8,000 to 7,000 cu. ft. of 600-700 B.t.u. gas; (2) 5 gal. motor fuel directly stripped from the gas; (3) ammonia in an amount corresponding to 20 lb. of sulphate of ammonia stripped from the gas and condensation liquor; (4) 25 to 30 gal. of a crude oil-like character of very light tar, as main condensation product and the recovery from the tars of the following: (1) 5 gal. motor fuel; (2) 2½ to 3½ gal. creosote oil; (3) 1½ to 2½ gal. lubricating oils and (4) 8 to 12 lb. of lubricating grease. This will leave a residue of heavy oil of tar-like character, which will be suitable for use as fuel oil.

Primarily, the object is to obtain a material of coke-like character, high in carbon, containing not more than 15 per cent volatile, in the form of stable hydrocarbon, that will burn without smoke and will be suitable for any of the following purposes: (1) To be briquetted into a smokeless domestic fuel of anthracite character; (2) to be pulverized and burned directly in furnaces; (3) to be burned directly on chain-grate stokers; (4) to be ground and mixed with high-volatile coal for the purpose of making metallurgical coke.

Feeding Devices Employed

One of the problems requiring special consideration was the feeders, of which there are two for each oven, each of which has to deliver a stream of coal 9 ft. wide in a controllable thickness and at variable

(Continued on Page 76)

House Heating

THE WARM AIR HEATING SYSTEM COMPARED WITH HOT WATER BOILERS

J. B. Allington, Rochester Gas & Electric Corporation

In this article, which was delivered before the annual meeting of the Commercial Section of the Empire State Gas and Electric Association, June 28 and 29, there is given some important information regarding the comparative efficiency of the warm air heating system and the hot water system. Various superiorities of the former in comparison with the latter are described.

I do no care to take up the time of this meeting with a general discussion of gas-fired house heating because I feel that this has been freely discussed at this and previous meetings of the Association.

It is generally conceded by those who have made a careful study of the matter that the house heating business is not only desirable for the gas companies, but is an exceedingly fertile field for increased business in the future. A time is coming when gas for house heating purposes will be in great demand, not only by the wealthier people, but by those in moderate circumstances as well. I wish merely to treat one phase of the house heating business which to me seems of prime importance and which I have carefully studied for the past year. I speak of the warm air heating system.

Warm Air Heating System

The average hot air furnace even though it may be designed for gas firing is inefficient, but the higher efficiency of the warm air heating system, as compared to hot water as the heating medium, may make this furnace an economical proposition. Therefore, the inefficient hot air furnace may still cost no more to operate during a heating season than the hot water boilers as they are designed at present, since its efficiency is even greater than that of the present hot water boiler.

In this furnace the gas is burned in a sheet metal combustion chamber of rather small dimensions. The products of combustion are carried downward through a series of cast iron heater sections into a heavy cast iron manifold and thence to the flue, the air entering at the bottom of the furnace passing upward around the heater sections and thence to the rooms.

Increased Efficiency in Heating

This, you see, gives us the benefit of the principle of counterflow, for our coldest flue gases will give up their heat at the cold air inlet to the furnace. The products of combustion in this case enter the flue at a temperature of 170 deg. Fahr. The gain in the thermal efficiency of the hot water heating system is the latent heat of the water evolved in the combustion of the gas which represents about 10 per cent of the total heat and the thermal capacity of the products of combustion between the temperatures of 170 deg. and 260 deg., which presents an additional 5 per cent of the total heat. It is, therefore, apparent that there is a gain of 15 per cent in efficiency and, whereas in a hot water heating system, a man must be told that his gas bill will be double his coal bill, we can tell the man that with the warm air system his gas bill will be only 70 per cent higher than his coal bill. This, you see, is an important factor in the sale of gas for house heating purposes.

Draft Conditions

One would expect that the most serious problem in connection with the use of the warm air furnace, referred to above, would be the draft conditions. Of course, back draft is prevented by means of the drafthood in exactly the same manner as in the hot water system. As in any installation, good draft is necessary for the successful operation of the heater. However, in this case in as much as the water has been removed from the products of combustion, the flue gases are lighter than ordinarily, and there is no difficulty in removing them. The water vapor evolved during combustion is, of course, condensed in the heavy cast iron manifold at the base of the heater sections and is drained to a dry well in the cellar floor. The manifold, being made of cast iron ⅜ inches thick, will stand the corrosive action of this sulphurous condensate for some years.

Other Points of Superiority

There are some other points of superiority of the hot air heating system over the hot water system —namely, temperature conditions in the house and the load factor of the system. A house, in which the hot air system is correctly installed will be much more uniformly heated than one heated by the hot water system and there are no objectionable radiators. In connection with the installation of the hot air system I would strongly recommend the use of return circulation from the living room.

It has been found desirable to bypass one burner of the hot air furnace around the room temperature control, so that one burner, consuming about one-third of the gas, burns 24 hours a day throughout the heating season. The other burner is turned on and off by the control at much less frequent intervals than would otherwise be the case. This is desirable for the customer because it maintains his air circulation at all times, thus giving less drafty conditions in the rooms and is more desirable from the gas company's viewpoint because the maximum demand of each installation is thus reduced about 40 per cent.

Given a heater of long life which, while operating at cost of 15 per cent less than the hot water boilers, gives a uniform temperature in the house and burns gas 24 hours a day, is it not apparent that our efforts should be concentrated on the efficient warm air heating system?

The Service Charge

WHY GAS COMPANIES ARE JUSTIFIED IN MAKING A SERVICE CHARGE

J. E. Bullard

The service charge is a just charge and will result in ultimate benefit to the gas company and to the gas consumer as well. Other public utilities are permitted to make this charge and the public is accustomed to paying it. It should not be difficult to convince the people of the justice of the charge, as far as the gas company is concerned. The service charge is worth while fighting for and the way to success is by educating the public to understand what it is and why it is justified. After the people see the light, there will be no great difficulty in obtaining legislative action.

It seems rather peculiar that electric light companies should be allowed to make a service charge but that there should be hostility against the gas company doing likewise. Talk to a few people, however, even to some electric men and the answer is forthcoming. As a matter of fact I have heard the same argument given by some people rather closely connected with the gas industry. This is about what is said:

"The electric light company has to make a service charge because it must hold enough generating capacity in reserve to supply the maximum demand upon the plant. You can't store electricity, but it is different with gas. The gas company can build storage holders and run its plant at near the average load so it don't need a service charge."

No thought is taken of the investment that must be made in the storage holder and the idea seems to be that the service charge is made merely to cover the generating capacity in the electric plant. Of course this is only a small part of the total investment that must be covered by the service charge, if that charge is to take care of all the fixed charges and the theory at least of the service charge is that it will meet the interest and depreciation on everything and leave the rate for consumption to cover the operating costs only.

In the case of electricity some companies have so adjusted their service charges that the income rate is virtually the same whether any current is being sold or not. The cost to the consumer less service charge is merely the actual cost of generating the current. If a gas company adopted a service charge that did the same thing, the gas rate would be very much lower than it is now and the consumption of gas very much higher. It might not be possible to do this in the case of domestic users, but it is possible, as has been demonstrated by the electric companies, to do it in case of industrial consumers.

Difficulties With Gas Service Charge

The difficulty the gas industry is experiencing in putting into effect and maintaining adequate service charges is due to the lack of information that exists both on the part of the public and also on the part of public utility men themselves. The electric light company, at least in most cases, is permitted to make a service charge. The telephone company is also allowed to make what is virtually a service charge. It is not compelled to install a telephone and allow the subscriber to pay for only the calls he uses. A certain minimum charge is made and prepayment machines are installed only where there is a certainty that the calls made will be great enough in number to make the installation profitable.

If the gas company used the same method the telephone company does in making rates, every residence consumer would be required to use a minimum or at least pay from two to three dollars a month. In some cases the minimum would be still higher.

People are fair when they have the right information but they are misinformed with regard to the reasons why the gas company is entitled to make service charges. There seems to be a pretty general impression that the service charge was a war measure, used to make it unnecessary to increase rates, and that now that the war has been over for five years, there is no reason why it should be continued.

People Must Be Shown Justice of Service Charge

Not until a thorough aattempt has been made to teach the people differently, can the service charge and new form of rates be successful in the gas business, and until that system of rates is used the industry will be working at a very decided disadvantage. It will be permitting the electric company to get business that really does not belong to it.

If people only knew the real facts of the matter, instead of a strong prejudice against the service charge, there would be a demand for it that could not be resisted. It does not do very much good to try to persuade the city councils and the state legislatures that the service charge is needed. These men need votes to secure re-election. They can get votes only when they pass the ordinances and the laws that the people want. If people do not want a service charge on gas, then if these politicians are wise they will see that laws are passed that will prevent service charges being made.

Real Purpose of the Charge Must Be Explained

Teach the people just what the service charge is, what it does, and why it is needed, and they will demand that it be used. Even if the company is successful in having laws held up that will prevent the making of a service charge, even if the public service commission allows or goes so far as to recommend service charges and the general public is not taught the necessity of these charges, there will still be trouble. Just so long as the service charge is

looked upon as a means of securing additional revenue rather than as a means of reducing the cost of gas to the average consumer, there is going to be a very decided opposition against its adoption.

Getting the service idea across is purely a selling proposition. The idea must be sold to the general public and it really is not a hard problem. It is not consistent to permit telephone and electric light companies to make service charges and to forbid gas companies to do likewise. The electric light companies are allowed to do so because they have sold the idea. It certainly ought not to be hard for the gas companies to sell it when people have already become accustomed to it in other lines.

In some countries even restaurants have a service charge which they call a cover charge. Where tips are not permitted it will probably become more and more the practice to make some sort of service charge. The service charge idea is one that is becoming more and more universal and it is only a matter of time when it will probably be adopted in lines of business where it is not being used at all now.

Service Charge Will Help Build Up Business

In the public utility business it is really a necessity. They are not allowed to make any excess profits. They cannot build up big surpluses and declare stock dividends. If they are to succeed and to render good service to the communities they serve, the capital invested must be protected. Unless a company can pay dividends on its stock and meet the interest on all its bond issues, it cannot raise the money that is needed for extensions and for the maintaining of the service that the public demands and that the public is entitled to.

Under the present conditions the only sure way of protecting the investment is to require the consumers to meet all the fixed charges regardless of their consumption and this is what a service charge does, if it is a proper service charge. The greater the industrial load a gas company builds up, the greater the burden it will have to bear during a business depression unless it makes a service charge which will cover the fixed charges incurred in serving these customers.

When consumers use other forms of heat, coal, oil or coke, they have to install equipment upon which they have fixed expenses, whether they use it or not. There is interest on the money invested, depreciation and replacement must be taken care of. It is hardly fair to ask the gas company to take care of all these charges when gas is being used. These same consumers do not ask the electric company to take care of similar charges when electricity is purchased. If the gas industry is to prosper either a service charge must be made or they will have to be permitted to create a surplus during good times that will carry them through a long period of depression and permit the regular paying of dividends. The second alternative is much more difficult to accomplish than the first.

SUCCESS SECRETS

L. G. Herbert

Onst there wuz a man who went into bizness for hisself. He sed that it wuz high time he Stopped makin' Money for other foakes an' profited by his own Wisdom an' Labors. An' sew he turned his back on his life as a employee.

He had never made a Success of being a Bizness Mate, for he had awlways Konsidered his Captains or Bosses as fussy an' exacting in the exTreme. To him it was absurd to be expected to be on time, or to be Called back to shut a drawer up tight, or to put back awl of the goods he had pulled out to show a Kustomer. When he did put the goods back, he rarely rapped them properly or Arranged them as they should be. If he swep' up, he wood skip the Corners, an' if he cleaned a Window, he wood neglect the last polish what made it shine.

When his Associates took up Courses of study or went to nite Klasses at bizness college, he wood go a Time or Two to see how he liked it. He never liked it. He always decided that there wuz too much monotonous, grubby, uninteresting Study expected that wouldn't get a fellow anywhere. He forGot that it was this Foundation Work upon which Reel BeneFits were built. Sew he went to the Movies while his Kompanions waisted their time trying to Learn sometHing they didn't no.

When he had a Legacy left him by a old ant, he chortled, "I'm some wise guy. Why I've had a good time an' now I'm Better Off than the rest. Whatdoyounoaboutthat?"

When he went into bizness for hisself, he thought it wuz all Noncents to be Thorough. So he didn't expect 2 much of hisself, an' he won golden opinions —from his help, by not expectin' 2 much of them. That is, they pertended to think he wuz a grate man to his facest, but they laft at him behind his back.

Won day he kneaded money. He went to the Bank. The Bank asked for a statement. After they red the statement, they refused the Loan. He went to a Money Lender to raise some Kash on a Chattel Mortgage. The Money Lender kum in an' looked around. When he saw the Slip-Shod manner in which everything wuz kept, he sed brootally, "Nothin' Doin'!"

He went home an' tryed to raise money from his wife's Foakes. They told him to go chase hisself. He faced Ruin. Finally Despair seized him, an' he wuz took Sick. The doctor kum an' sed,

"Man Alive, you got to brace up or you will die. They ain't much the matter with you, but Enuff that you'll have to exert yourself to the limit!"

Our friend was skairt an' really wanted to pull hisself together, but he wuz so used to half doin' things that he up an' dyed in spite of hisself. The Foakes who came to the funeral out of respec' for his wife sed,

"We Never Saw It to Fale. The Man Who Tries to Get Out of Work, Works Hardest in the End, an' Always Plays a Losin' Hand."

Gas Company and Plumbing Dealer Co-operation

WHAT GAS COMPANIES CAN DO AND HOW PLUMBING DEALERS CAN RECIPROCATE

Frank H. Knapp, President Pittsburg Water Heater Co.

The following report of the Committee on Co-operation with the Plumbing and Heating Dealer of the Commercial Section, American Gas Association, was read before the convention of the National Association of Master Plumbers in Atlantic City. It outlines a plan of action, shows what the gas company can do, and what the plumbing dealer should do in return and indicates the benefits to be derived by both parties from their co-operation.

This is by no means a new subject but it is of sufficient importance and far reaching influence as to be worthy of special attention.

A co-operative arrangement between the gas company and the plumbing dealer must assure reciprocal benefits, and profitable and increased sales for both.

A mutually satisfactory agreement would, in its practical application, tend to:

1. Increase the volume of gas appliance business for the plumber and the gas company.
2. Eliminate the sale and installation of cheap and inefficient appliances.
3. Establish in the minds of the public a higher regard for gas service and standard appliances, and confidence in the merchandiser.

Safety is a most important factor in connection with the selection and installation of gas appliances. There should be a clear understanding between the gas company and the plumber as to approved and safe methods of installation and agreement should be reached with respect to whatever rules may be adopted governing the question of flue connections. Attention is also directed to the importance of offering nothing but standard appliances—quality merchandise—at prices which will be fair to the public and allow the seller to recover his necessary costs plus a legitimate profit.

What the Gas Company Can Offer

The gas company is in a position to offer the plumbing dealer:

The assistance of its salesmen to help close dealer sales.

The loan of suitable stock for the dealer's window display and show room.

Assistance in preparing window displays.

Sales literature imprinted with the dealer's name.

Appliances from stock at prices which will enable the plumbing dealer to meet his overhead and make a fair profit.

What the Plumbing Dealer Should Do in Return

The plumbing dealer in return should:

Agree to handle only standard appliances or such as are built to present or subsequent A. G. A. specifications.

Make installations, particularly of automatic water heaters, in accordance with the gas company's approved practice.

Follow the gas company's rules for the piping of buildings and homes.

The human equation is the decisive factor in the satisfactory operation of any co-operative arrangement, and even among competitors we find their business relations more harmonious when the individuals are acquainted with one another—so it must be in this case.

The responsibility of initiating the move for these two interests to co-operate and work together is shared equally by the gas company and the plumbing dealer, but for the purpose of making a start we will assume that the former will take the first step.

How Co-operation Can Be Secured

The secretary of the local chapter of the Master Plumbers Association, wherever such a group exists, as well as each individual plumbing dealer in the community should be interviewed, the advantages of such co-operation explained to them, definite assurance given of the company's willingness to co-operate, and an invitation extended to attend a subsequent meeting of all the plumbing dealers and gas company representatives for further discussion of the subject and to perfect a working organization.

A special effort should be made to have present at this first meeting every plumbing dealer in the community. The gas company should be adequately represented by the management, the head of the Sales Department and members of his organization, as well as other departments.

Make clear the purpose of the meeting and remove any differences which may exist between the company and the dealers. There can be only one reasonable basis for co-operation of this character; it must include fair minded consideration of the interests of each side and result in tangible benefits to both.

Each Situation Requires Separate Solution

This committee cannot suggest a detailed plan which would be operative in every situation. Local conditions and policies vary to such an extent as to make this inadvisable. There are, however, several working agreements in operation between gas companies and their local plumbing dealers, the results of which have proven that such a plan is feasible and distinctly to the advantage of both interests and the public. The following may be referred to in this connection:

F. A. Woodhead, Arlington Gas Light Co., Arlington, Mass.; E. A. Willard, Portland Gas Light Company, Portland, Me.; E. W. Allen, Lynn Gas & Elec-

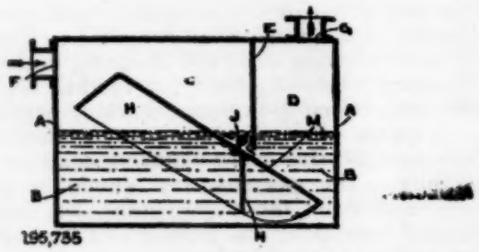
tric Co., Lynn, Mass.; R. A. Koehler, Public Service Gas Company, Newark, N. J.; J. H. Dill, Consolidated Gas, Electric Light & Power Co., Baltimore, Md., and W. W. Flanders, Tacoma Gas Company, Tacoma, Wash.

Representatives of the American Gas Association have appeared before the members of the National Association of Master Plumbers, and the secretaries of its local chapters, and in turn the members of the American Gas Association have been addressed by representatives of the Master Plumbers Association who publicly expressed on behalf of their respective associations the hope for a better understanding and close co-operation of these two interests.

Your Committee is strongly of the opinion that the adoption of these recommendations will be of real benefit to the gas companies, the plumbing dealers, and the public, and that steps should be taken to perfect the necessary arrangements to put such plans into effect in every community.

GAS WASHERS

British patent number 195,735 is concerned with a gas washer which is shown in the accompanying diagram. A rectangular tank A is divided into compartments C, D, by a partition E extending downwards into the washing liquid B. An inverted vessel H is suspended from a transverse shaft J which is mechanically oscillated. The gas to be treated is fed



through the inlet F and a quantity is periodically trapped by the oscillating vessel H, carried below the liquid, and allowed to pass through a perforated baffile N and a perforated wall M into the compartment D. The gas is thereby atomised in its passage through the washing liquid. This apparatus gives a longer contact between the gas and the washing liquid. A series of such washers may be employed, containing different liquids for the removal of different constituents from the gas.

DELIVERING GAS TO RECORDING CALORIMETERS

In recording gas calorimeters the most difficult problem has been the automatic correction for the varying volume of a definite quantity of gas in consequence of the effect of temperature and pressure on the volume and the effect of these on the proportion of contained water vapour and hence of the total volume. What is required is that the gas should be measured and delivered at such a rate, whatever the temperature and pressure may be at the moment, that if it were thereafter brought to standard temperature and pressure and were still saturated with water vapour and measured in that condition the rate of flow so measured should be constant. Further, it is important that the measurement and delivery should be performed with the highest possible degree of accuracy.

According to the invention the water level of the meter is maintained constant so that any form of drum may be used and the same actual volume of gas is allowed to pass for each revolution of the drum, but the rate of rotation of the axle is made variable so as to pass gas in such volume as to correspond to its volume at the temperature and pressure of the moment.

In further details the reader is referred to British Patent No. 194,370.

Use Manufactured Gas to Make Milady's Hats

Manufactured gas plays an important part in the manufacture of women's hats. Gas fuel is used in each heating step, employing gas steam boilers, gas heaters, irons, hatters' stoves, and other appliances.

As the different seasons approach, designers construct shapes of hats which will harmonize with the prevalent styles. Hundreds of styles are made up for approval of the manufacturers. After selections are made of shapes, styles, widths of brims, etc., the models are forwarded to the moulder, who casts aluminum dies which enable hat manufacturers to make up the popular shapes in large lots. Gas-fired furnaces are used for melting the composition used in casting the dies.

In manufacturing hats, the straw or felt is placed over the lower half of the die, which is brought down, bringing the two dies together. The upper half of the die is heated by a small perforated copper coil burner shaped to conform with the shape of the die. The press is then closed for about two minutes, during which time pressure on the material is exerted, causing the heat applied to the fabric to shape a hat according to the form of the die.

Another method is by using a hydraulic press and heating the straw or felt by steam generated by a gas-fired boiler. In making shapes for higher priced hats, instead of using presses or stamping machines the work is done by hand with a gas-fired hatter's iron internally heated. This method is slow and requires skill, and is only applied to the higher priced hats.

After the hat is shaped it is sized with a glue composition so that it will retain its shape and is dried in a room heated by steam coils or indirect gas-fired radiators. A gas-fired steam boiler is used for dyeing and finishing the feathers used in trimming hats. Gas-fired steam boilers are also used in the manufacture of artificial leaves, flowers and other decorations. The material used is generally linen or muslin, which is dyed, starched and strapped on a frame and hung in a drying oven heated by gas.

As The Journal Views It

AN UNNECESSARY EXPENSE

Recently in a rate case a citizen on the other side, supposedly representing the interests of the public, objected strenuously to granting the gas company's request for a fair gas rate. The reason for the objection appeared to be based principally on the fact that this particular gas company had spent considerable sums in advertising itself and its service to the community. The deduction was that if the company had so much money to spend on the so-called and so claimed useless and selfish advertising, then it did not deserve to have an increased rate, for it was extravagant and wasteful with its funds.

Such short-sightedness and narrow-mindedness are occasionally found in communities that are served by gas companies. It is fortunately prevalent among the few only. Nevertheless when an official or even a semi-official representative of the people, a man of standing in a community, gets up and makes such objections, the gas industry cannot afford to let them pass unanswered.

There is no need to defend the right or the propriety of gas companies advertising and presenting their case before the consuming public; neither is it necessary to discuss the value of such advertising. The results have proven that it is worth while, and that it forms one of the best ways of creating and enhancing public good will. To find fault with a public utility for spending money to further its own interests and incidentally the interest of its customers, by advertising freely and effectively in newspapers and trade journals, is essentially to deny it the right to exist. The fact that there are people who object to such procedures makes the advertising all the more necessary. The gas industry must stand up for its rights whenever it is attacked and must fight every unfriendly and injurious onslaught that is made against it. If those who object, really wish to be sincere friends of the public and honestly zealous in looking after the public welfare, they would realize that the best way to promote the interests of the community is to stop spreading inaccurate information concerning public utility companies and trying to prevent them from obtaining just rates and fair treatment from the community and its representatives.

THE WALKER BILL AGAIN

An act of legislature, just like any act caused by human or natural agency, may have its indirect or secondary as well as direct or primary effects. Sometimes the former are even more potent and more important than the latter.

It may be likely that the legislators, who devised and passed the Walker Bill, reducing the gas rates in the City of New York to $1.00 per thousand cubic feet and at the same time increasing the thermal standard, had no conception of all that might follow the passage of such a bill. Their sole intent was to reduce the price of gas, or at least that was what they wanted it to appear to be, and some of them may have been sanguine enough to think that the consumer would benefit by their action. Up to the present the price of gas has not been reduced and the consumer has not benefited in any way. In fact he has already lost out, for the City of New York has had to appropriate large sums of money to fight the injunction secured by the gas companies, money that must come out of the taxpayers' pockets.

Whether the great majority of gas customers have realized the real character of this action or not is questionable, but a particular group of them in Staten Island has undoubtedly learned how ill advised an act the passage of the dollar gas bill was. It has been brought home to them very conclusively by the action of a body of financiers and organizers who were planning to erect a gas works to supply certain outlying sections of the island where gas is not available at the present time. These interested parties have abandoned their development plans for the time being at any rate, because of the fact that dollar gas would not even pay them for the operation of the gas works.

It is interesting to note that the franchise which had been held up prior to the passage of the Walker

Bill, was immediately allowed by the city officials after the bill was signed, but was just as promptly and politely declined. When the consumer realizes that he cannot have gas unless he pays for it, and pays reasonably; when he begins to see the real purpose of such movements as the reduction of the gas rate to a figure which is lower than cost of manufacture, and which is bound to be declared illegal by higher courts; when he begins to realize that these are simply political machinations that are engineered for some particular politician's or political party's interest, when he thinks the matter over carefully and considerately, he will see that such action will usually have an adverse effect on his welfare.

It is in reality a very excellent thing that an opportunity was afforded a group of gas men to reject a franchise and bring home directly to the people, who would have been benefited had a franchise been granted, the fallacy and worthlessness of legislative action which is unjust and unconstitutional, and which is not meant for his welfare at all. By being deprived of the benefits of gas through legislative action, which is claimed to be for its interest but which in reality is just the contrary, the community will learn the truth, perhaps a little distastefully, and without any sugared coating, but the truth just the same about legislators and their supposed efforts for its well-being. The proof of the pudding is the eating thereof!

GAS MAIN REPAIRING IN SAN FRANCISCO

The cut shows testing and recording gauges on a gas main during progress of repairing leaks in the main. The Pacific Gas and Electric Co. has a modern, up-to-date equipment for cutting through pavements and opening up trenches for making repairs to gas mains.

LOW TEMPERATURE CARBONIZATION

(Continued from page 69)

speeds. Ordinary methods of feeding were not applicable, owing to the temperature at the receiving point, and the feeders had to be located a sufficient distance from the furnace housing to provide working room around the apparatus.

The cycle of operation is continuous. The coal is fed from bunkers in a stream approximately one-half inch thick and at a rate corresponding to the speed of the distillation plate. It is "eased" on these plates by a secondary feeding roll to prevent "splashing" of particles or the formation of dust. These plates, when receiving the coal, are near their maximum temperature, and distillation starts immediately. When the plates reach the metal bath after receiving their charge of coal (in about 30 seconds), they quickly regain the heat absorbed by the coal and continue to transmit heat, now derived direct from the metal bath, to the coal layer resting on their surface. This heat is further augmented by the radiation from the surrounding refractory walls, and the resistance of the half-inch layer of coal to heat infiltration is quickly overcome.

Steps in Carbonization

A relatively hard and non-sticky film of devolatilized coal forms next to the plate almost instantly, and even if the speed of the conveyor is such that the coal is not thoroughly "cooked" in its passage over the direct contact heat zone, it will not adhere to the smooth surface of the plates. The coal particles which originally are crushed so as to pass a ½-in. screen become welded into a continuous, devolatilized sheet of honeycomb-like structure, still slightly plastic (due to heat influences), and the sheet leaves this first run at the full maximum furnace temperature. The overhanging portions of this coke sheet break off by their own weight, and fall on the surface of the return conveyor, and together with the plates, now reversed, pass back under the heat-transmitting chamber. This extra time gives further opportunity for the escape of the small quantity of gas remaining, which gas serves the very useful purpose of keeping oxygen from the lower part of the structure, not only preventing local oxidation of the gases themselves, but preserving the metal conveyor parts. After completing the return passage, the coke falls into a hopper and passes through a star feed device onto the coke-collecting conveyor. Coke leaving this furnace and coming into immediate contact with air will not flash, and unless immediately piled, no water-quenching is necessary. The coke can be immediately crushed and transferred to bunkers for use in the forms previously noted.

The same uninterrupted cycle of continuous operation will follow the gas arising from the distillation process. Exhausters create a suction in the collecting mains. Automatically operated "butterfly" valves allow the escape from the oven of only sufficient gas to maintain pressure enough to prevent the infiltration of air. Automatic admission of low-pressure steam vapors supply any deficiencies that might occur during periods when the process is being started or stopped, and the gases from the coal are

not in sufficient volume to maintain the desired plus pressure (about 2 mm. of water). The gases first pass through coolers which condense the oils which flow by gravity to storage and settling basins, and then from the pressure side of the exhausters to ammonia scrubbers, where water picks up the ammonia. Leaving the ammonia scrubbers, the gas passes through oil columns and thence to the gas holder or point of ultimate consumption.

Heat Balance

Careful observation of the heat necessary for devolatilization at the Huntington Plant indicates that the following heat balance will approximate the operating requirements for coal having 36 per cent volatile and 5 per cent moisture, on a pound basis:

	B.t.u.
Heat necessary to raise moisture from 72 to 212 deg	7.0
Latent heat of steam	48.5
Note: The latent heat necessary to distill the water of composition is not taken into account, because this water comes from internal combustion with the oxygen of the coal and the heat generated is sufficient for the distillation of the resulting water.	
Heat necessary to raise the temperature of the steam to its exhaust temperature of 800 deg.	19.7
Heat necessary to distill the hydrocarbons and raise their temperature from 72 deg. to the exhaust temperature of 800 deg.	91.0
Heat necessary to raise the coke from 72 deg. to temperature at which it leaves the oven (1,000 deg.)	181.8
Total B.t.u. required for distillation	348.0
Heat necessary for radiation, in the Huntington oven	180.0
Total heat requirements, B.t.u.	528.0

Proper insulation will reduce the radiation losses to not more than 100 B.t.u., making the total heat input necessary for each pound of coal treated, 428 B.t.u. The efficiency of the apparatus as a heat-transfer medium will be at least 80 per cent, so that the total heat input per pound of coal treated will be 560 B.t.u., or 1,120,000 B.t.u. per ton of coal treated. Assuming that this coal has 13,000 B.t.u. as received, or 26,000,000 B.t.u. per ton, the neat losses will be 4.3 per cent, and the thermal efficiency of the process will be 95.7. In view of the ordinary daily operation in high-temperature plants, where a heat efficiency of 92 per cent is not unusual, this figure will balance relatively correct with accepted data.

The basic differences between low-temperature distillation according to the process herein described, and those which are well known, lie in the following: (1) The use of a moving, continuous platform, carrying a thin layer of coal and passing through a heat-transmitting chamber; (2) the use of a molten material for transmitting the heat by metal-to-metal contact with the conveyor; (3) the use of a molten material for treating the conveyor through the distillation chamber; (4) means for providing heat to the bath through flues located within the bath.

At present there is no commercial advantage in distilling at low temperatures such coals as give metallurgical coke, because of the great value of such coke. Low-temperature distillation can be most advantageously applied, however, to coals and lignites that do not yield good metallurgical coke and will at the same time provide a material which can be mixed with coal containing the resins necessary for agglomeration into coke, in proportion to the amount of such resins available, the resulting product being a metallurgical coke of high quality.

Cost of Operation Distributed on Weight Basis—Charges Other Than Coal (Net Ton of 36 Per Cent Volatile Coal) on Hot Gas Producers for Heat Supply.

	Product Charged	Oven Operation	Producer Operation	Miscellaneous Expense	Fixed Charges	Manufacturing	Total
*1.	Coke, 1,340 lb.	$0.150	$0.180	$0.075	$0.3375	.....	$0.7425
2.	Gas, 7,000 cu. ft.	.026	.0312	.013	.0525	.....	.1287
3.	Tar, 25 gal.	.02	.024	.01	.045	.....	.099
4.	Ammonia, 5 lb.	.0005	.0006	.00025	.00112	.38	.3824
5.	Light oil (gas), 5 gal.	.0035	.0042	.00175	.00787	.30	.3173
6.	Total	$0.20	$0.24	$0.10	$0.45	$0.68	$1.669
7.	Total without tar	.18	.216	.09	.405	.68	1.57
8.	Light oil (tar), 5 gal.	$0.007	$0.0084	$0.0035	$0.03325	$0.14	$0.1921
9.	Creosote oil, 3 gal.	.005	.006	.0025	.92375	.10	.1372
10.	Fuel oil, 10 gal.	.008	.0096	.0040	.038	.16	.2196
11.	Total	$0.02	$0.024	$0.01	$0.095	$0.40	$0.548
12.	Grand total (items 7 and 11)	$0.20	$0.24	$0.10	$0.50	$01.08	$02.119

*After deducting 160 lb. used in hot gas producer.

The economic justification for low-temperature plants is found in any one or a combination of the following:

1. At the mines, where high-volatile coal or lignite can be marketed as smokeless briquettes, motor fuels, lubricants, creosote, fertilizers, and gas and fuel oil.
2. Between the mines and principal point of ultimate consumption where a market can be found for gas, and where a "milling in transit" rate will work out to advantage when considered in terms of all the resulting freight combinations on byproduct tonnage.
3. In large central-power-station operations (more than 40,000 kw.) whose available coal contains more than 26 per cent volatile.
4. In large domestic gas plants, where a combination of low-temperature operations supplemented by the destructive distillation of the resulting coke will work out very attractively.
5. In large manufacturing operations requiring a combination of power and gas or fuel oil in volume sufficient to use 400 tons or more of coal a day.
6. Under unusual conditions of fuel scarcity.
7. In the conversion of natural resources into fuel oil, for the conservation of domestic capital that might otherwise be expended abroad for material derived from available coals and lignites.
8. In railroad operations, where the coke can be used either alone, in powdered form or combined with the fuel-oil residue, for the operation of locomotives, when fuel requirements are usually sufficient to justify the capital expenditure necessary.
9. In oil-bearing shale-rock operations, where the material can be cheaply quarried and prepared to sizes of one-half inch and under, and where the 5 per cent heat loss, fixed charges and operating expense will not outweigh the cost of natural petroleum available in the territory.
10. In the distillation of sawdust and other wood residue, for the purpose of recovering the wood alcohol, acetic acid and pitch contents, and the conversion of the residue into charcoal.

Summary

Low-temperature distillation of coal must be made at temperatures between 800 and 1,300 deg. F., which constitute the extreme limits.

A temperature must be chosen that will give large amounts of tar and oils, low percentage of violatile matter in the coke and a large production in the oven. This temperature must be combined with the most convenient thickness of coal layer in order to insure speed of heat transfer and production.

The distillation process cannot be economically carried beyond a point where the volatile matter is reduced below 10 per cent.

After the volatile matter has been reduced to 15 per cent, the coke loses its sticky appearance and the distilling gases lose their smokiness. The coal will then burn without evidence of smoke.

About 1,200 deg. working temperature is most suitable to meet heat-transfer and production-capacity requirements.

The oven distills a thin layer of coal spread on a continuous belt conveyor so as to increase the speed of the heat transmission through the coal and the output of the oven, without the necessity for removing the coal during distillation.

Another feature of the oven is to float the conveyor on a bath of molten lead, maintained at the desired temperature (1,100 to 1,200 deg. F., but in any case not above 1,300 deg. F., which is the maximum temperature for producing coal distillation of primary nature) so as to insure the rapid transmission of heat to the coal without the use of high-temperature radiating walls. In the gaseous atmosphere no lead losses will occur through oxidation, and no change in the load will occur through the effect of the sulphur which exists in this atmosphere. The molten lead has been found a most valuable metal for the purpose, on account of its floating power and heat-transmitting qualities. Means have been provided to hold the molten lead at the desired temperature in a tank of refractory masonry, and to carry to the lead, by U-shaped flues, an amount of heat sufficient for distillation.

Under these conditions it has been found that commercial results are obtained with a coal layer one-half inch thick which distills completely into low-temperature coke (10 to 12 per cent volatile) in less than five minutes, and more rapidly when a higher percentage of volatile is desired in the resulting coke.

The low-temperature coke obtained from this process has all the qualities of low-temperature coke as produced under laboratory conditions, and constitutes a most desirable smokeless fuel for improving the coking qualities of high-volatile coal for use in steam boilers on stokers, as powdered fuel, or for briquetting into domestic fuel.

SPECIAL SALES ARE THE RULE

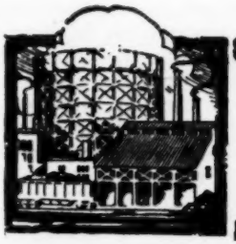
J. B. Dillon

The Denver Gas & Electric Light Company have a habit of pulling off special sales. As you know, these sales bring many people to your place of business that might not otherwise come.

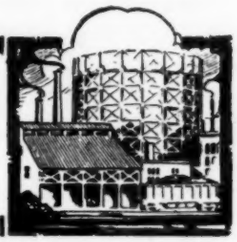
Once a person is in your store, he will look around and, if the stock is shown to its best advantage, a sale of some article may result at the moment or later on. This, of course, applies more so to the articles that are not being specialized, for no one with any business sagacity would think of carrying on a special sale and making it necessary for a hide-and-seek method of finding the goods.

Just now the company is offering at $2 down a well-known make of carpet sweeper, the sale to last three weeks, and it is stated:

> "Such liberal terms have never been made before, and may never be made again. So don't miss this opportunity. If our salesman calls, let him in; he has a real message for every housekeeper.
>
> "Remember, the terms are special. They last three weeks only. Request a demonstration now or order your ——— for immediate delivery."



NEWS OF THE GAS INDUSTRY



Wisconsin-Minnesota Light and Power Co. Purchased by H. M. Byllesby & Co.

H. M. Byllesby & Co. announce the purchase from the American Public Utilities Company of the control of the Wisconsin-Minnesota Light & Power Company, for the purpose of consolidation with Northern States Power Company.

The former officers of the Wisconsin-Minnesota Company have resigned and the following board of directors was elected July 16: H. M. Byllesby, president; R. F. Pack, vice-president; Halford Erickson, vice-president; A. S. Huey, J. J. O'Brien, R. J. Graf, F. W. Stehr, Dean Francis C. Shenehon, J. H. Briggs, H. W. Fuller and John H. Roemer.

The Wisconsin-Minnesota Company owns and controls 71,806 horsepower of developed water power and 700 miles of transmission line in Western Wisconsin, supplying electricity to 73 cities and towns, including La Crosse, Eau Claire, Chippewa Falls, Menominee, Wisconsin, and Red Wing, Minnesota. Gas is supplied in La Crosse, Eau Claire, Chippewa Falls, Wisconsin, and Winona, Minnesota. Gross earnings of the company for the twelve months ended April 30, 1923, were $3,008,752; net $1,461,095. The total number of electric and gas customers served is about 44,000. In addition to the developed water powers on the Chippewa and Red Cedar rivers, the company controls a large quantity of undeveloped water power.

The extensive and productive territory served by the Wisconsin-Minnesota Light and Power Company is contiguous to part of that supplied by Northern States Power Company, one of the larger of the Byllesby utility companies. The Northern States Company already supplies 386 cities and towns, including Minneapolis and Saint Paul. The two systems are connected by transmission lines and their operation will be consolidated immediately. Northern States Power Company has 38,820 horsepower of developed water power, a large amount of steam power and undeveloped hydro-electric sites on the Mississippi and St. Croix rivers with a potential capacity of upwards of 100,000 horsepower. The company's gross earnings for the twelve months ended April 30, last, were $14,614,665; net $6,024,615.

Passing of John Gimper, a Tribute From a Friend

John Gimper, for many years one of "The Shining Lights" of the old Western Gas Association, died at his home in Pasadena, California, on Tuesday, the tenth day of this month of July, after a long period of illness, mostly due to advanced age.

John Gimper

He was born in Eurich, Switzerland, Jan. 24th, 1840, and was educated at the then noted school of Frobel there.

He came to America in 1861, and worked for a while in a laboratory at Nashville, Tenn. After the Civil War he went to the oil fields in Pennsylvania, being among the first to operate oil gas apparatus. He was in the gas business as engineer and manager for nearly forty years at Leavenworth, Kansas, Springfield, Missouri, and finally at Galveston, Texas, where he continued for nineteen years. He was at the latter city during the great storm of 1900, and made a notable record among gas men by his masterly handling of the rebuilding of the gas plant, especially during the period of rebuilding of the city. He was active in his profession until he retired at the age of seventy years; planned and erected his beautiful home, where also he at last fell asleep. He was always a great lover of flowers and he spent his time in attending to these and beautifying his home, until the end. The story of his notable work at Galveston after the flood was embodied in an interesting paper, which was published in The American Gas Light Journal in September, 1900. He was a consistent member of the Baptist Church, and one of his friends who was in business with him for 36 years, remarked on occasion, "John Gimper is God's man." A widow and only son survive him.

FREDERICK EGNER.

Bond Issue

New Bedford, Mass.—The New Bedford Gas and Edison Light Co., this city, has disposed of a bond issue of $1,145,000, a portion of which will be used for extensions to their gas and electric plants in this city.

Amesbury Gas Plant Damaged

Amesbury, Mass.—A fire which was very spectacular, broke out at about 12.30 Sunday morning at the gas plant of the Amesbury & Salisbury Gas Co., located almost opposite the round house at the Boston & Maine freight yard, and before the all out was sounded, practically everything that would burn had been consumed. It was one of those fires fed by inflammable material that went up in a few moments' time. It was discovered by autoists coming up from the beaches.

With a gas holder of 30,000 feet capacity within ten feet of the burning building, and another one practically full with a 100,000 feet capacity 50 feet distant, the firemen had no difficulty in keeping the crowd back. They had everything to themselves, for at first only a few ventured to the high bank opposite.

With oil evidently feeding the fire for some time, every little while there would be a great sheet of flame shoot 50 to 75 feet in the air, giving indications that the fire was being renewed after it appeared as if the firemen had it well under control. Unmindful of the two tanks of gas close at hand, the firemen worked unceasingly, for an hour and one-half, when the all out came in.

Accompanying the great sheets of flame were clouds of the blackest of smoke. As one stood on the bank and watched events, it was the general opinion that the entire plant was lost. The company supplies the town for both lighting and cooking quite extensively, while at Salisbury, Seabrook and Hampton beaches it is largely used for cooking purposes, it being the most convenient method at these summer results.

While at one time it was felt that the plant was ruined and the loss would be extremely heavy, around $20,000 to $25,000, upon further investigation it was learned that the plant itself, other than the building, which is of brick with a one-story brick addition, where the plant for making the gas is located, was all right.

The roofs of both buildings were completely burned off and the window frames consumed. There was a large pile of coal in one corner of the rear building, and the firemen were successful in keeping the fire out of this, burning as was the interior of this rear structure, where the heaviest of the fire was. The coal was adjacent to the railroad where it had been shoveled in from a coal car.

The fire, it was believed, was due to a tank of fuel oil in the rear building. It was high up on the wall, where there was a gravity to be had to the fires. Whether this overflowed in filling the main, or there was a leak, probably will never be known, but it is felt that it was from oil running from this tank onto the floor, which slopes toward the boilers, taking fire from the boiler fires.

The company was at work early yesterday morning making repairs, and by 8 o'clock were well along with certain work necessary before the start could be made in making gas. In the afternoon the plant was underway and gas was being made. Chief Feltham, in speaking of the loss, said that he had been informed that the plant itself, so far as the making of gas was concerned, was left uninjured, the loss being wholly to the building. If this is the case, probably $5,000 would be the extent of the damage done.

Mayor Indorses Cut Price Gas

Denver, Colo.—Mayor Stapleton signed Councilman Daniel Lucy's resolution, adopted by the city council, requesting the Denver Gas and Electric Light Company to reduce its rates on gas to 75 cents a thousand cubic feet.

In signing the resolution, the mayor said:

The resolution is merely a request for a reduction in rates, and will only be effective insofar as the company may desire to act on it. In conference with the officials of the Denver Gas and Electric Light Company on Friday, members of the city council and I were assured that the company is making every effort possible to reduce the price of gas, and that its management believes that in the next twelve months it will be able to make a very material reduction."

At present the gas company is required to refund to the city all collections on gas in excess of the 75-cent rate. Collections in excess of this figure permit the company use of the excess funds before payment is made to the city, it is said. Its last payment to the city represented the accumulation in excess charges for several years.

Mayor Stapleton said the conferences with Clare N. Stannard, vice-president and general manager of the company, and other officials led him to believe that they have a "very plausible, reasonable and logical" policy in their endeavor to effect rate reductions.

Extend Gas Lines to Care for Growing Needs

Aurora, Ill.—Growth of suburban towns west of Chicago has made it necessary for the Western United Gas & Electric Co. to make many changes and improvements in the service.

Two trunk lines are now being installed from the plant at Lockport to Downers Grove, Hinsdale and Elmhurst. The towns along the Milwaukee and Burlington railroads are being taken care of by the lines also.

The cost of the new pipe is more than $80,000. Towns aided will include Glen Ellyn, Elmhurst, Lombard, West Chicago, Bensonville, Pelaski, Roselle, Bloomingdale, Downers Grove, Hinsdale, and Wheaton.

Chamber of Commerce Favors Erection of Gas Plant

Las Vegas.—At the regular meeting of the local chamber of commerce held this week, the executives of the organizations went on record as favoring the erection of a gas plant in the city. The matter is to be placed before the councils of both Las Vegas and East Las Vegas at an early date for the purpose of securing the franchise. According to the promoter the first gas produced could be furnished to the consumer at the rate of $1.85 per thousand feet but this rate it is thought could soon be lowered as the consumption increased. If there are no drawbacks it is believed that the plant can be in operation by the first of the year.

Tom Allen, Well-Known Southern Gas Man, Seized in Raid

The following story appeared in the Gastonia (N. C.) Daily Gazette on Friday, the 13th of July, and is the culmination of a "Thirteen" water heater sale being staged by the Gastonia and Suburban Gas Co., under the direction of Tom Allen and O. L. Maddin, manager of the company:

"Sergeant William T. Rankin single handed, this morning, Friday, 13th, made a raid at 5:13 o'clock on the Armstrong Apartments, South Marietta street, and captured Thomas Allen, special representative of the Gastonia & Surburban Gas Co. The sergeant took Allen to the office of the local gas company to see if he had been faking the people by his teasing ads, mixing up black cats, 13 per cent off and 13 per cent on, $13 off $13 to the first customer, $13 to the last customer, $13 to each thirteenth customer.

"The whole thing was a very much mixed affair, but it looked mighty good to the sergeant, so when they reached the office of the gas company, after the 5:13 raid Allen, with his shirt stuck in his pants, shoes but no socks, continually protesting his innocence of any crime, pleading with the officer to know what the trouble was, claiming that he never stole anything, nor made any liquor, even telling him that he would not know moonshine if he saw it, had about convinced the sergeant that he was a pretty good fellow. Girls didn't bother him, liquor didn't bother him, and he was a model citizen.

"The climax came, however when the officer said, 'According to your ad, the first arrival this morning gets a lot of these thirteens black cats, etc. Now, I am going to cut my gas bill in half, besides all these things. I want that all enamel white Chambers Fireless Gas Range, and I am the first arrival. Make out a contract, figure out this superstitious black cat Friday 13 stuff and take it off, for Friday 13th is my lucky day.'

"Allen, by this time, thought so too. Other people were down to capture this first thirteen mess, and Mr. Allen was busy, half dressed unshaven, hair not combed, until he was relieved by Mr. G. W. Arnold, special representative of the Chambers Fireless Gas Range, who arrived after a bad night in the morning at 9:13.

"The gas company docked Arnold $13 for his late arrival and for bathing in corn after getting the bad news of his friend, Jess Willard. Allen and Arnold are glad that Friday 13th don't happen every month."

13 13 13 13 13 13 13 13 13 13 13
ARE YOU
SUPERSTITIOUS
13 PER CENT OFF
ON ALL
Gas Ranges and Water Heaters
THIS IS A SPECIAL LIMITED OFFER
FRIDAY, JULY 13, ONLY
Additional $13.00 allowance to the First and then each 13th purchaser
GASTONIA & SUBURBAN GAS COMPANY
Phone 447 228 W. Main St.
Call and see the Chambers Fireless Gas Range—Cooks with the Gas turned off.
13 13 13 13 13 13 13 13 13 13 13

Gas Plant Remodeled

Newton, Iowa.—The new equipment for the Newton gas plant is now being installed, as all repairs on the plant are completed and the interior ready for the equipment. The new fixtures were furnished by the American Gas Construction company and represents the Tenney Gas equipment of Minneapolis. This equipment will double the capacity of gas service in the city.

Public Utilities of St. Petersburg Gain

St. Petersburg, Fla.—Business done by the public utilities that are owned and operated by the city of St. Petersburg showed an increase of 17 per cent in the last fiscal year, ending June 30, 1923, according to a report by Director of Utilities R. E. Ludwig. The actual receipts from the gas and water systems and street car lines were $446,506. In the year previous the receipts were $379,042. The gas plant produced more money than any other utility with the street car lines a close second. How much net profit was realized from the utilities will not be known until the annual audit by the city accountants is completed.

Rate Reduction in Tampa

Tampa, Fla.—As the result of an agreement between the City Commissioners and the Tampa Gas Company, following several weeks of conference and investigation, Manager Roscoe Nettles, of the company, announces a general reduction of rates for gas to the consumers of Tampa.

These reductions amount, in the aggregate, based on present consumption, to a saving of $20,000 a year to the gas consumers of Tampa. They go into effect Aug. 1, which is the date the new state law, allowing municipalities to regulate rates, becomes effective.

Both the city and the company agree that the new rates are to remain effective until Jan. 31, or six months, when another investigation will be made as to whether the rates are satisfactory, which may result at that time, in a further reduction.

By reaching this amicable agreement with the company, the Commissioners save the city about $10,000 of expense for arbitration, as provided for under the state law, in addition to from six months to a year of delay which would attend the prolonged and difficult process of arbitration.

The new rates, as announced by the company and approved by the Commissioners, are as follows:

Minimum 500 cubic feet $1.11 gross .11 discount, $1.00 net.

Next 1,000 cubic feet, $2.05 gross, .20 discount, $1.85 net.

Next 5,000 cubic feet, $1.90 gross, .19 discount, $1.71 net.

Next 20,000 cubic feet $1.66 gross, .16 discount, $1.50 net.

Over 26,500 cubic feet, $1.50 gross, .15 discount, $1.35 net.

The reduced rates mean a large saving to Tampa consumers, both large and small. They compare most favorably with the rates now in force in other cities, being lower than most cities in Tampa's class.

Commissioner Lowry, speaking for the Commission, said:

"It is very gratifying to the Commissioners to be able to bring about this reduction of gas rates without the expense and delay of a prolonged and difficult arbitration. The matter has been pending for some time and the Commissioners have found Mr. Nettles, of the company, ready and willing to meet us half way and he has been extremely courteous and obliging. We have gone into the question of rates very thoroughly and we believe that we could not have accomplished any more by resorting to the plan of arbitration authorized by the new state law. It is probable that, later on, when the company gets its new equipment and facilities in operation, that we will be able to secure even lower rates. We have, at any rate, avoided about a year's delay and about $10,000 of expense and obtained the relief for the people immediately, instead of compelling them to continue paying the old rates until the slow process of arbitration could be completed."

Commissioners Barritt, Adams and McCants coincided in the statement of Commissioner Lowry.

Manager Nettles of the Tampa Gas Company said that the company was pleased that the matter had been so amicably and satisfactorily adjusted. He said further:

"The fact that the company has granted a reduction of rates, without arbitration, at a time when the cost of materials is rapidly increasing, may seem remarkable. The company, however, did not desire to put the city or itself to the expense of carrying on a prolonged arbitration. If the city had called for arbitration, the state law gives the company sixty days to select its arbitrator. This would have been a delay of two months to begin with—then the subsequent procedure would have extended the delay fully a year. The reduction is made possible only by the fact that the company will effect various economies in production, due to the installation of a new and modern plant which is now being built. This reduction will cost the company about $20,000 a year in revenues, but the business of the company is now increasing rapidly. We have put in 300 new connections in the past sixty days to homes using gas stoves and water heaters.

"In this connection, I wish to speak in the highest terms of the courtesy and consideration given the company and the subject by the Commissioners and their very evident desire to act for the best interests of the people of Tampa."

The present reduction of gas rates dates back to the recent session of the legislature when City Attorney H. S. Hampton and Peter O. Knight, representing the public utility companies, drew up a bill giving the city the right to regulate gas and electric rates. This bill was passed by the legislature and becomes effective August 1.

Early in July, Manager Nettles suggested to City Attorney Hampton the advisability of getting together on a mutually satisfactory reduction of rates, expressing the willingness of the company to make a reduction without resorting to arbitration. The matter was at once brought to the attention of the Commissioner by Mr. Hampton, through Mayor Brown, and a committee was appointed composed of Commissioners S. L. Lowry, chairman; W. J. Barritt, W. A. Adams and James McCants, City Manager Lesley Brown, Port Engineer A. W. D. Hall and City Attorney Hampton to examine the books of the company and reach an agreement with Manager Nettles. This committee worked very faithfully, studying the condition of the company and the rates in other cities compared with Tampa's. The result of the investigation is the schedule of rates given above.

Manager Rider Invents a Hand-Made Gas Meter

Gadsden, Ola.—J. S. Rider of the Tri-City Gas Company has invented a hand-made gas meter that is now being exhibited in the windows of the gas company. It is entirely different from the gas meter now in use, and while probably it will not be very extensively used for practical purposes, Mr. Rider feels that for display purposes it will have a great field, if he can secure a patent and have it placed upon the market.

The gas meter is considered one of the oldest unimproved instruments in existence, as the only kind in use was invented more than 100 years ago and has never been improved. Inventors heretofore have never been able to produce one on an entirely different principle, and Mr. Rider's is expected to prove quite a little sensation for that reason.

It is made entirely by hand and is encased in glass so that observers may see it work. Mr. Rider has applied for a patent for his invention.

New Building for Kingston

Kingston, N. Y.—The Kingston Gas & Electric Company has purchased property on Broadway for the purpose of erecting a building to provide for adequate housing of its transportation and shop equipment. Plans are being prepared for a building to contain a garage, gas meter shop, gas fitters' shop and linemen's headquarters. The company expects to develop the property within the near future and maintain it in such condition that it will be a credit to the city.

Public Service Corporation Annual Report

A comparative statement of combined results of operations of Public Service Corporation of New Jersey and subsidiary companies for the month of June and for the twelve months ending June 30, has just been issued. For June the operating revenue of subsidiary companies was $6,740,834.11, as against $6,269,518.52 in the same month last year, showing an increase of $471,315.59. The net increase in surplus before dividends was $629,907.88, as against $456,-094.47 for the like period in 1922.

For the twelve months ending June 30 the operating revenue of subsidiaries was $81,957,170.39, an increase of $5,753,951.38 over the twelve preceding months, and the net increase in surplus before dividends was $6,345,457.66, as against $4,866,854.74, a gain of $1,478-602.92.

Municipal Gas Company Begins Fight for Tank

Albany, N. Y.—A legal battle, which probably will not cease until the Court of Appeals renders a final verdict, has been begun by the Municipal Gas Company against the City of Albany to test the validity of the Smith gas tank ordinance and compel the city to issue a permit for the erection of a new gas reservoir in North Albany.

Papers in the litigation have been filed with the Albany County Supreme Court by Neile F. Towner, attorney for the gas company. The complaint has been served on Mayor Hackett, and Corporation Counsel Gilbert V. Schenck is preparing the city's case when the first action is tried.

Attorney Towner has made applications for a peremptory mandamus to compel James N. Nolan, superintendent of buildings, to issue a permit for the construction of a gas holder in the North End, and an injunction restraining city officials from interfering with the Municipal Gas Company in constructing the holder.

The issues involved will be tried at the chambers of Justice Joseph Rosch in Monticello, Sullivan County. The outgrowth of the hearing, it is said, will undoubtedly be the beginning of action by the company to have the Court of Appeals decide on the constitutionality of the Smith ordinance adopted June 4, which placed a ban on future gas containers within the city limits.

The ordinance was adopted following a lively hearing at which the odors emanating from the present gas holder of the company and from the gas works were condemned by members of the North End Improvement Association. The gas company asserts the ordinance is unreasonable and void, as it is in violation of the constitution.

In the complaint served on Mayor Hackett it is pointed out that, under the terms of the proposed building zone ordinance, the plant of the company is located in what is known as the heavy industrial zone, and that the city is without authority to prevent the construction of the holder. It also points out that more gas is needed for the consumers of the company and that the present holder is not of sufficient capacity.

The question to be presented to the Court of Appeals as to whether a city has the right to adopt such an ordinance restricting construction of a gas holder of a public utilities corporation, has not been determined by the courts, it is said.

The proposed new gas holder was originally planned for a site about 200 feet south of the present tank and 250 feet from the street. It is now proposed, and formal application has been made to place the holder 500 feet back from Broadway, and directly behind the present holder. The new site is but a few feet from the tracks of the Delaware and Hudson Company.

The agitation against the Municipal Gas Company was started by the North End Improvement Association, which finally had an ordinance introduced in the common council and adopted by that body, prohibiting any further construction of gas holders in Albany. Mayor Hackett signed the ordinance, and it became effective at once, halting the work done on the foundations for the holder, a permit for which Superintendent Nolan had issued. The proposed tank would be larger than the present one.

Industrial Gas Problem Discussed

Chickasha, Okla.—The industrial gas situation in Chickasha is narrowing to a focus with the city gas committee, as well as private interests assembling masses of detail preparatory to making final reports on the advisability of laying a line to the field for the purpose of furnishing Chickasha with industrial gas.

D. F. Burritt, gas engineer of Chicago, who has been here for several days making a survey for the Chickasha Gas and Electric Co., is rapidly nearing the conclusion of his labors here, according to F. D. Shaffer, manager of the company.

Mr. Burritt has assembled nearly all of the data necessary to making his report, Mr. Shaffer said. The engineer is expected to return to Chicago soon, where he will put in the form of a report and recommendations to the company, the details pertaining to the field and the local situation collected while here. Several days will elapse before the final report is submitted, it is believed.

A conference was scheduled for July 23rd at the office of the Chickasha Gas and Electric Company, with Fred Insull of Tulsa, president of this company, Mr. Burritt, Mr. Shaffer and Jack Arnold, assistant local manager, participating. It was indicated that the preliminary details will be gone over prior to Mr. Burritt's return to Chicago to prepare his final report and to make recommendations.

Enthusing Its Employees

J. B. Dillon

It is well known that any one who is enthused with his work will do it willingly and just a whole lot better than the listless employee. The Colorado Fuel & Iron Company, employing between one and two hundred persons in its general office at Denver, invited all to be its guests, on an inspection tour of the big steel mills at Pueblo and Minnequah. Coal was shown coming out of the mines, and just what happens from the time it leaves the elevator car until it is done for. This in itself would require pages to explain, yet to see how it is done requires but a short time, and it explains the realm of by-productism.

The pig iron slabs, the white hot steel ingots, were viewed from the time they leave the storeroom until they come out in various shapes and sizes waiting to be coored and then marketed.

And then, every clerk, every sub-official who may have wondered why it was necessary to worry over "trifles," saw that every little trifle added makes some steel emblem all its own.

The trip was worth ten times the expense to all. The clerks know what a big and important concern they are helping, and which helps them. Just another case of co-operation, but when we can secure co-operation, there is no such word as failure.

Poughkeepsie Co. Orders New Equipment

The Central Hudson Gas & Electric Company of Poughkeepsie,, N. Y., has placed order with the Gas Machinery Company of Cleveland, O., for eight-foot six-inch water gas generating equipment and auxiliary machinery.

This will go into the gas plant which is located beneath the high bridge at Poughkeepsie, and in which the purifiers were installed some time ago.

Gas Company Praised

Indianapolis, Ind.—Admiration for the efficiency and promptness of the officials of the Citizens Gas Company, which supplies gas for the giant balloons in the national elimination balloon race, was expressed in a letter received by Blaine McGrath, promotion director of the Indianapolis Chamber of Commerce, sponsor of the event, from Albert Bond Lambert of St. Louis, Mo., millionaire sportsman and veteran balloonist, who acted as official starter for the race Wednesday. More than 1,000,000 cubic feet of gas was supplied by the gas company for the inflation of the fourteen gas bags, originally entered in the race. J. B. Steep, assistant general manager of the gas company, supervised the filling of the balloons.

Mr. Lambert's letter follows:

"Please extend to the officials of your gas company my compliments, appreciation and admiration for their efficiency and their patience. During the hours of uncertainty they did everything possible and with a degree of courtesy which more than justified the success now nationally recognized as a record. The time of the start and finish created a record which to my mind will never be excelled.

"My congratulations also to you and the Chamber of Commerce."

Rate Case Is Settled

Port Arthur, Texas—A letter received by the city commission from Manager F. Y. Low of the Peoples Gas Company was answered with an official statement that, as far as the city commission is concerned the differences over the gas rate to be charged here and the rules laid down by the company, have been settled.

Manager Low wrote the commission that his solicitors have been encountering a number of potential subscribers who give as reason for not connecting that the gas rate matter is yet to be settled and others expressed the opinion that the company would not be able to continue operation here.

The letter sent in reply was signed by the Mayor and both commissioners and assured Manager Low the matter has been settled and that in the opinion of the commission, with some added consumers, the people of Port Arthur will be given adequate service with a further reduced rate, and a confidence is expressed that the gas company, with its plans outlined will meet the situation to the satisfaction of all.

Company to Have New Plant

Sioux Falls, Iowa—A new plant for the Sioux Falls Gas Company plant at the foot of Tenth street on property owned by it within a comparatively short time is the announcement of the officials of the company. The business is growing satisfactorily now and the present plant at the foot of Tenth street will not much longer be able to meet the needs of the expanding city, it was stated.

The Sioux Falls Gas Company recently acquired additional strength when Ralph H. Beaton and associates of Columbus, O., purchased a substantial interest in it. Mr. Beaton and his associates operate gas companies in various parts of the country and are particularly interested in western gas properties. Homer V. Armstrong will continue as manager of the company's business in Sioux Falls.

The plans for the future of the company were discussed in full at a recent meeting, it was said, when arrangements were made for the building of the new plant. A definite date for this construction cannot yet be set, but it will be before many months, it was stated.

The company is now installing a new six-foot generator at its present plant and is laying additional mains this summer to take care of its new customers and to keep up with the growth of the city. The new plant later on will permit of increased capacity and extensions of its lines. The policy of the company will be to give its customers the best of service continually, it was stated, just as it has in the past.

Elects Directors

Long Branch, N. J.—The annual stockholders meeting of the Consolidated Gas Company for the election of a board of directors was held July 12 at the office of the Company, 176-178 Broadway. The directors elected were:

Marion McMillin, Alanson Lathrop, Warren W. Foster, James Lawrence, of New York; Philip Lehman and Gustavus Maas, of New York and this city; F. R. Cutcheon and Jacob Steinbach, of Long Branch, and Frederick W. Hope, of Red Bank.

The directors will elect officers at a future meeting.